Inspections & Maintenance

North Dakota Stormwater Conference

Minot, ND
March 28, 2007

NORTH DAKOTA
DEPARTMENT of HEALTH

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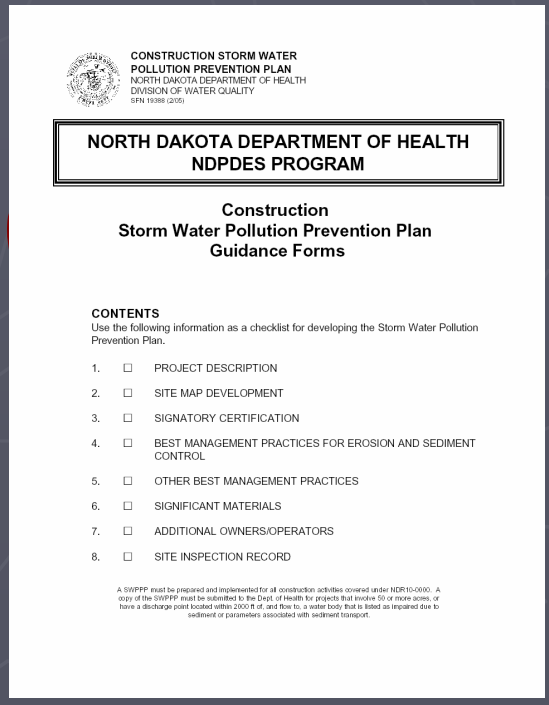
Getting Started

- Pre-Inspection Planning
  - Required Frequencies
  - Areas to be inspected
  - Record / Report Requirements
  - Inspector Qualifications
  - Equipment
  - Forms / Checklists
  - Corrective Action Procedure



CONSTRUCTION STORM WATER
POLLUTION PREVENTION PLAN
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF WATER QUALITY
SFN 19388 (2/05)

NORTH DAKOTA DEPARTMENT OF HEALTH
NDPDES PROGRAM

Construction
Storm Water Pollution Prevention Plan
Guidance Forms

CONTENTS
Use the following information as a checklist for developing the Storm Water Pollution Prevention Plan.

1. ☐ PROJECT DESCRIPTION
2. ☐ SITE MAP DEVELOPMENT
3. ☐ SIGNATORY CERTIFICATION
4. ☐ BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL
5. ☐ OTHER BEST MANAGEMENT PRACTICES
6. ☐ SIGNIFICANT MATERIALS
7. ☐ ADDITIONAL OWNERS/OPERATORS
8. ☐ SITE INSPECTION RECORD

A SWPPP must be prepared and implemented for all construction activities covered under NDR10-0000. A copy of the SWPPP must be submitted to the Dept. of Health for projects that involve 50 or more acres, or have a discharge point located within 2000 ft of, and flow to, a water body that is listed as impaired due to sediment or parameters associated with sediment transport.

Inspection Frequencies Differ by Permit

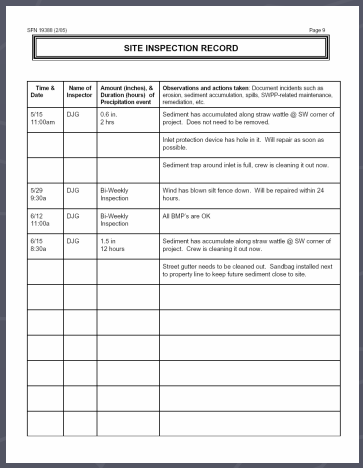
- **Industrial Facilities**
  - 2 Comprehensive per year (minimum)
- **Construction Sites**
  - Once per 2 week plus following rain
- **Storm sewers serving Cities > 10,000**

  (Municipal Separate Storm Sewer Systems MS4s – for short)
  - Annual to once in 5 years
    - (based on structure type)

SWPP Plan – Inspections

Construction Permit: *Pg 9; Part II.C.6 - also see Part III.A*

- ✓ At least once every 14 calendar days and within 24 hours after any storm event of greater than 0.50 inches of rain per 24-hour period during active construction
- ✓ Reduced frequencies allowed for:
  - Winter (suspend if no outdoor work)
  - Completed areas
    - Stabilized – once per month
  - Long linear projects



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SITE INSPECTION RECORD

Time & Date	Name of Inspector	Amount (inches), & Duration (hours) of Precipitation event	Observations and actions taken: Document incidents such as erosion, sediment accumulation, spills, SWPP-related maintenance, remediation, etc.
5/15 11:00am	DJG	0.6 in. 2 hrs	Sediment has accumulated along straw wattle @ SW corner of project. Does not need to be removed.
			Inlet protection device has hole in it. Will repair as soon as possible.
			Sediment trap around inlet is full, crew is cleaning it out now.
5/20 9:30a	DJG	Bi-Weekly Inspection	Wind has blown silt fence down. Will be repaired within 24 hours.
6/12 11:00a	DJG	Bi-Weekly Inspection	All BMP's are OK
6/15 8:30a	DJG	1.5 in 12 hours	Sediment has accumulate along straw wattle @ SW corner of project. Crew is cleaning it out now.
			Street gutter needs to be cleaned out. Sandbag installed next to property line to keep future sediment close to site.

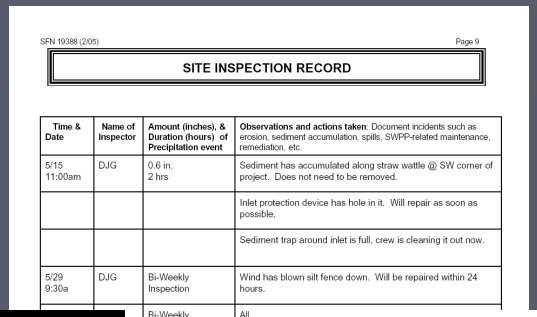
Records

Inspection records must contain the following:

1) Date and time of the inspection
2) Name and qualifications of the inspector
3) Major observations relating to the implementation of the SWPP plan
4) Corrective actions taken
5) Rainfall date and amount for all events >1/2 in
6) Updates to SWPP when E/S controls are changed

Inspection reports kept on file with the BMP plan for at least three (3) years after the date of inspection

Checklist, Forms, Logs



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SITE INSPECTION RECORD

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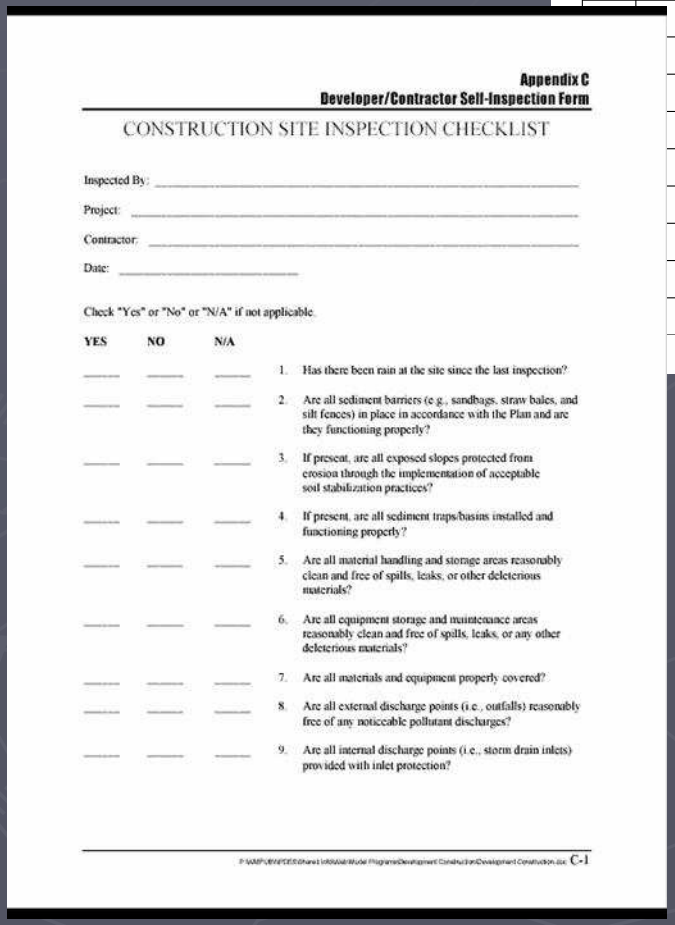
5/15 11:00am	DJG	0.6 in. 2 hrs	Sediment has accumulated along straw wattle @ SW corner of project. Does not need to be removed.
			Inlet protection device has hole in it. Will repair as soon as possible.
			Sediment trap around inlet is full, crew is cleaning it out now.
5/29 9:30a	DJG	Bi-Weekly Inspection	Wind has blown silt fence down. Will be repaired within 24 hours.
		Bi-Weekly Inspection	All
		1.5 in 12 hours	Se pr
			St to



Appendix C
Developer/Contractor Self-Inspection Form

CONSTRUCTION SITE INSPECTION CHECKLIST

Inspected By: _____

Project: _____

Contractor: _____

Date: _____

Check "Yes" or "No" or "N/A" if not applicable.

YES	NO	N/A		
____	____	____	1.	Has there been rain at the site since the last inspection?
____	____	____	2.	Are all sediment barriers (e.g., sandbags, straw bales, and silt fences) in place in accordance with the Plan and are they functioning properly?
____	____	____	3.	If present, are all exposed slopes protected from erosion through the implementation of acceptable soil stabilization practices?
____	____	____	4.	If present, are all sediment traps/basins installed and functioning properly?
____	____	____	5.	Are all material handling and storage areas reasonably clean and free of spills, leaks, or other deleterious materials?
____	____	____	6.	Are all equipment storage and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious materials?
____	____	____	7.	Are all materials and equipment properly covered?
____	____	____	8.	Are all external discharge points (i.e., outfalls) reasonably free of any noticeable pollutant discharges?
____	____	____	9.	Are all internal discharge points (i.e., storm drain inlets) provided with inlet protection?

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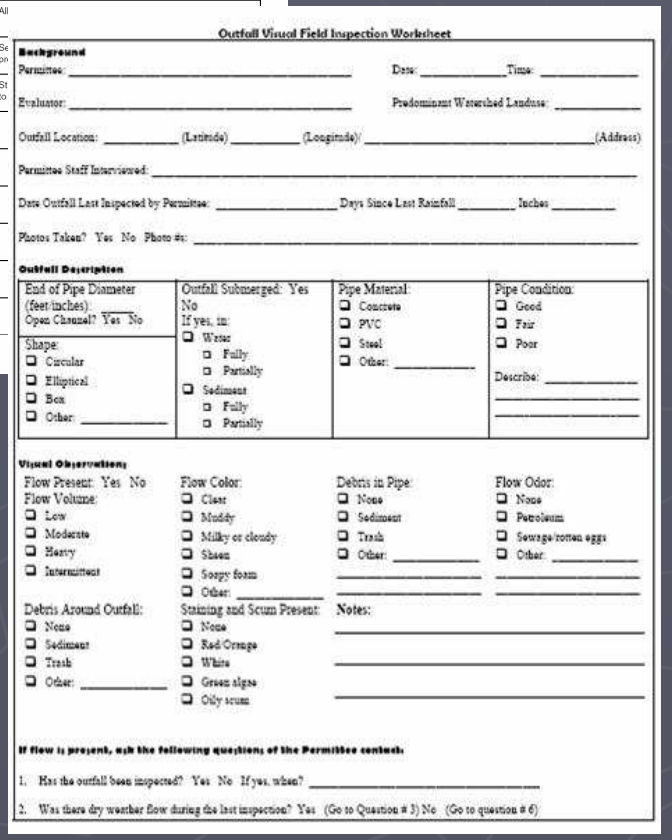


Outfall Visual Field Inspection Worksheet

Background

Permittee: _____ Date: _____ Time: _____

Evaluator: _____ Predominant Watershed Landuse: _____

Outfall Location: _____ (Latitude) _____ (Longitude)/ _____ (Address)

Permittee Staff Interviewed: _____

Date Outfall Last Inspected by Permittee: _____ Days Since Last Rainfall _____ Inches _____

Photos Taken? Yes No Photo #s: _____

Outfall Description

End of Pipe Diameter (feet/inches): Open Channel? Yes No	Outfall Submerged: Yes No If yes, is:	Pipe Material:	Pipe Condition:
Shape: ❑ Circular ❑ Elliptical ❑ Box ❑ Other: _____	❑ Water ❑ Fully ❑ Partially ❑ Sediment ❑ Fully ❑ Partially	❑ Concrete ❑ PVC ❑ Steel ❑ Other: _____	❑ Good ❑ Fair ❑ Poor Describe: _____

Visual Observations

Flow Present: Yes No	Flow Color:	Debris in Pipe:	Flow Odor:
Flow Volume: ❑ Low ❑ Moderate ❑ Heavy ❑ Intermittent	❑ Clear ❑ Muddy ❑ Milky or cloudy ❑ Sheen ❑ Soapy foam ❑ Other: _____	❑ None ❑ Sediment ❑ Trash ❑ Other: _____	❑ None ❑ Petroleum ❑ Sewage/rotten eggs ❑ Other: _____
Debris Around Outfall: ❑ None ❑ Sediment ❑ Trash ❑ Other: _____	Staining and Scum Present: ❑ None ❑ Red/Orange ❑ White ❑ Green algae ❑ Oily scum	Notes:	

If flow is present, ask the following questions of the Permittee contact.

1. Has the outfall been inspected? Yes No If yes, when? _____
2. Was there dry weather flow during the last inspection? Yes (Go to Question # 3) No (Go to question # 6)

What Must Be Inspected

- Overall Housekeeping & Control practices
  - Sediment leaving disturbed areas
  - Material storage secure
- Discharge points
  - Adjacent properties
  - Surface waters
- Erosion / Sediment Controls
  - Installed and working correctly
  - Maintenance needed?


USED
ANTI-FREEZE

Housekeeping

- Concrete wash water
  - Must be contained
  - Cannot drain to storm sewer
- Bulk storage must have adequate leak and spill protection
- Dewatering or basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) must follow BMPs
  - must be operated to minimize release of sediment
  - include energy dissipation device.

Equipment Access

Vehicle exit locations must be inspected for sediment tracking onto paved surfaces.

Tracked sediment must be removed from paved surfaces, within 48 hours, or within a shorter time specified by local authority

Sediment ponds, traps, basins

- ✓ Built as designed
- ✓ Adequate Sediment storage
- ✓ Outlet riser to provide 24hr detention
- ✓ Stabilized emergency overflow
- ✓ Energy dissipation outlet
- ✓ Clean-out required when ½ full

Sediment Pond / Basin

Permanent –temporary (circle) sedimentation basins: (location/ID)_____

Required basin installed (> 10 acres/ single point (T) or >1 acre new impervious (P)?	Yes No
Does basin have energy dissipation for outlet?	Yes No
Stabilized emergency overflow outlet?	Yes No
Was basin constructed /operational concurrent with construction?	Yes No
Are lopes stabilized with perm cover or temp erosion protection within 200' of surface water?	Yes No
Is basin connected to surface waters? Yes Name/description waters: _____	
Was discharge- connection stabilized within 24 hours of connecting?	Yes No
Dewatering: Onsite to a temp. settling basin? Yes No If offsite, is water turbid?	Yes No
If no settling basin, was appropriate BMPs for turbidity and scour applied?	Yes No
Is discharge from site creating a nuisance conditions or WQ violations?	Yes No
Observations:	

Construction Permit Criteria--
Appendix 1, Page 19

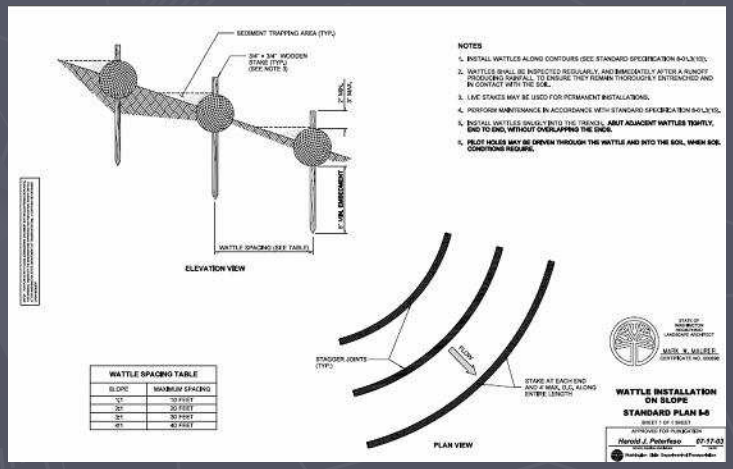
Down Slope Barriers
Silt fence

- Stakes secure & trenched-in
- J-hook (smile)
- 1/4ac per 100ft
- Should not be in channel (unless you need a temp. dam)
- Sediment Removal needed when 1/3 height

Infrastructure O&M

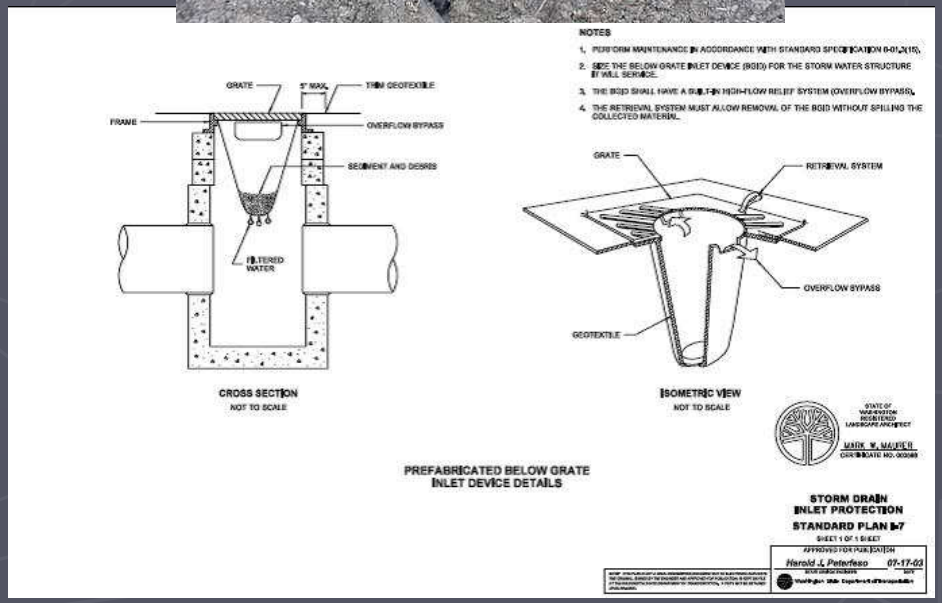
Biorolls, Wattles

Check the installation to ensure it matches design
Are they serviceable for purpose
No end-around flow



Storm Sewer Inlets

- Do not block – risk flooding
- Overflow or bypass for high flow
- Local conditions on use




THOMSEN
CHIROPRACTIC

Temporary Erosion Protection

- Seed & mulch on areas where grading ceased
- Sufficient amount and anchoring
- Water and wind erosion protection
- 21 day time for cover on area within 200ft of water
  - Pond embankments, Ditches, Berms, Soil Stockpiles
  - Does not include clean aggregate, demolition concrete and sand stockpiles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Stockpiles

Temporary soil stockpiles must have effective sediment controls,

Not placed in waterways

- Curb and gutter systems
- Conduits
- Ditches

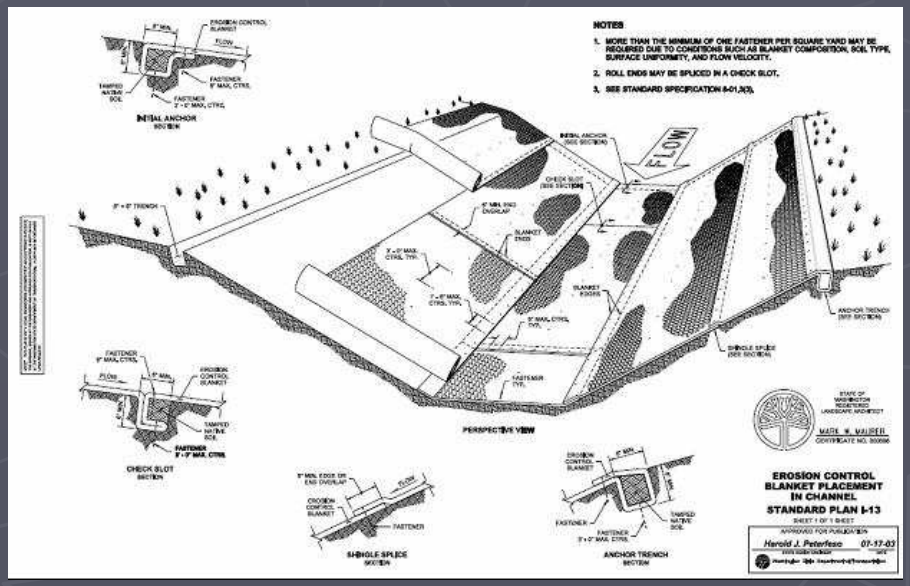
Ditch Stabilization

Are ditches draining water off-site or diverting water around site stabilized within 200 lineal feet of discharge to surface water or adjacent property?

Should be done within 24 hrs of connecting

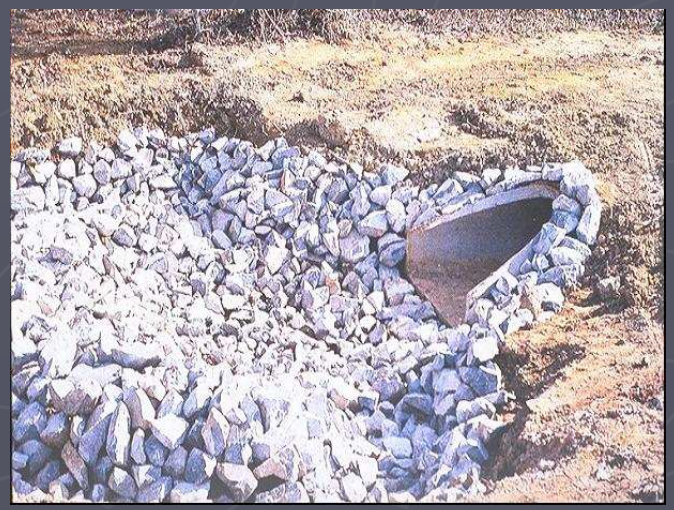
Erosion Control Blanket

- Per Manufacturer / design
- Check staple pattern
- Proper lap



Pipe outlets

- ✓ Must have temporary or permanent energy dissipation within 24 hours of connection
- ✓ Proper material per design – expected flow

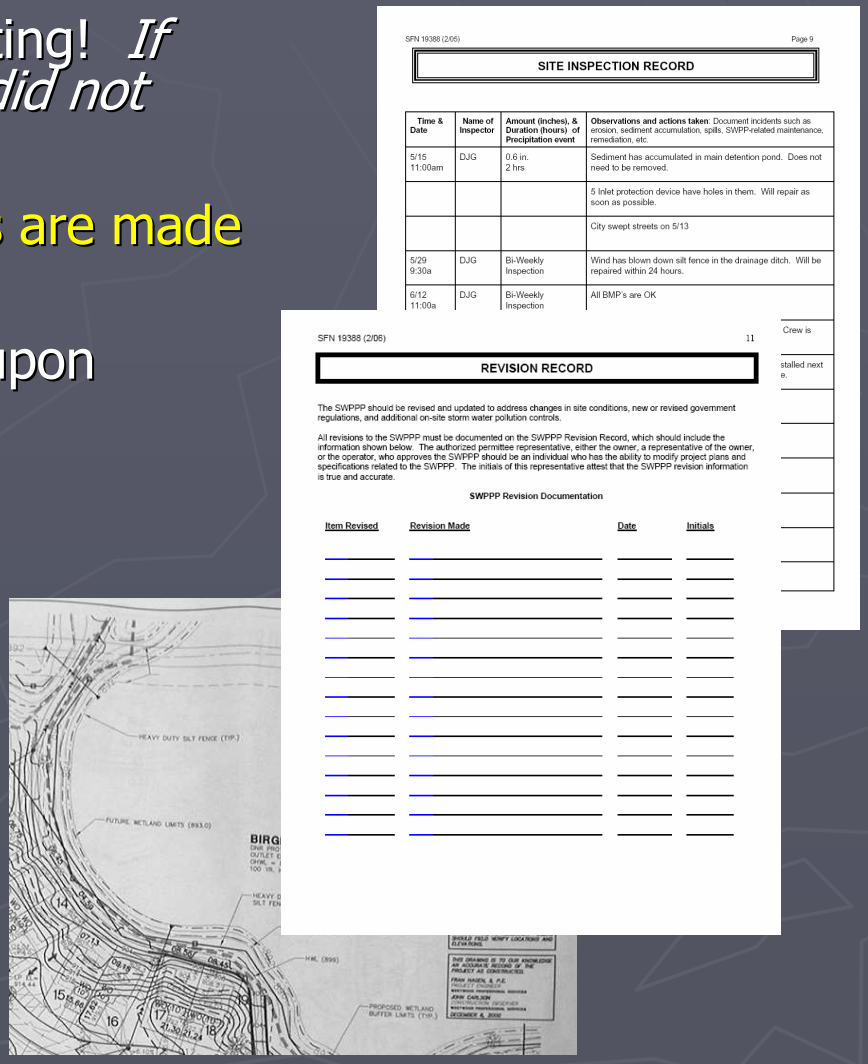



24 12:08PM


24 12:09PM

Documentation

- Inspections must be recorded in writing! *If they're not written down then they did not occur.*
- Document when substantial changes are made to ESC's or other SWPP items
- SWPP & Records must be available upon request
  - Department
  - Operator of municipal storm sewer
  - EPA
- 3 year record retention



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SITE INSPECTION RECORD

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5/15 11:00am	DJG	0.6 in. 2 hrs	Sediment has accumulated in main detention pond. Does not need to be removed.
			5 Inlet protection device have holes in them. Will repair as soon as possible.
			City swept streets on 5/13
5/29 9:30a	DJG	Bi-Weekly Inspection	Wind has blown down silt fence in the drainage ditch. Will be repaired within 24 hours.
6/12 11:00a	DJG	Bi-Weekly Inspection	All BMP's are OK

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REVISION RECORD

The SWPPP should be revised and updated to address changes in site conditions, new or revised government regulations, and additional on-site storm water pollution controls.

All revisions to the SWPPP must be documented on the SWPPP Revision Record, which should include the information shown below. The authorized permittee representative, either the owner, a representative of the owner, or the operator, who approves the SWPPP should be an individual who has the ability to modify project plans and specifications related to the SWPPP. The initials of this representative attest that the SWPPP revision information is true and accurate.

SWPPP Revision Documentation

Item Revised	Revision Made	Date	Initials

Discussion